



Impact of Employment-Related Geographical Mobility(E-RGM) on Livelihood of Daily Commuters from Rural-Urban Fringe to CBD of Patna

• Amisha Chhavi • Muskan Kumari • Nidhi Gupta
• Aishwarya Raj

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Corresponding Author : Aishwarya Raj

Abstract: Urbanization, and globalization have led to two major phenomena in the recent decade i.e., mobility of people and expansion of cities. The expansion of cities has led growth and development of suburbs or fringe areas surrounding cities. The cities provide varied employment opportunities for the population residing in the city as well as in surrounding areas and thus promote E-RGM. There are several drivers for mobility from fringe to city center including health infrastructure and educational, recreational facility but major driver promoting daily commutation is search for work. The

source communities surrounding the city, lack job opportunities for its population and compel them to move daily from fringe to city centre in order to maintain their livelihood. Spatial mobility has an impact on community and family relations, health as well as on income, and thus on the quality of life of the daily commuters.

Keywords: Employment-Related Geographical Mobility, E-RGM, Rural-urban fringe, Drivers of mobility, Daily Commuters.

Amisha Chhavi

B.A. III year, Geography (Hons.), Session:2019-2022,
Patna Women's College (Autonomous),
Patna University, Patna, Bihar, India

Muskan Kumari

B.A. III year, Geography (Hons.), Session:2019-2022,
Patna Women's College (Autonomous),
Patna University, Patna, Bihar, India

Nidhi Gupta

B.A. III year, Geography (Hons.), Session:2019-2022,
Patna Women's College (Autonomous),
Patna University, Patna, Bihar, India

Aishwarya Raj

Assistant Professor, Department of Geography,
Patna Women's College (Autonomous),
Bailey Road, Patna-800 001, Bihar, India
E-mail : rajaishwarya0117@gmail.com

Introduction:

Employment-Related Geographical Mobility “involves situations where workers consistently cross municipal, provincial, and/or national boundaries to get to their place of employment and back to their place of residence”(Barrett, 2017). The spatial mobility can be daily commutation to nearby cities, communities or can be long international travel. Spatial mobility slightly differs from that of migration of population as it does not involve change of residence of the commuters (Bole,2004). The daily commuters cover shorter distances between source communities and places of work on the same day. The most common place of work for these population is nearby towns and cities providing them job opportunities that their place of origin clearly lacks. This phenomenon of people's mobility generates a relationship between the fringe and city center.

The rural-urban fringe is “a spatial segment that exists between the city and the rural countryside” having homogeneity in terms of population and land use (Dikshit, 2011). The fringe of a city accommodates within it a large migrant population from rural areas, nearby small towns, and also from the Central Business District (Sinha & Bala, 2016). The population residing in the fringe area but travels daily to CBD of Patna to perform several secondary and tertiary activities for earning consider the city as a heaven for work in comparison to their place of origin or place of residence in the rural-urban fringe areas. Daily travel for work has an impact on health conditions, familial-community relations but improvement in economic condition acts as a veneer over the hardships. The E-RGM has a socio-cultural, economic impact as well as an impact on the health conditions of daily commuters. It is promoted by several socio-economic drivers of mobility which encourage commuters to visit the city daily as the destination for work.

Aims and Objectives :

The main objectives of this study are -

- 1) To find out socio-economic attributes of daily commuters from the rural-urban fringe to city Patna.
- 2) To know the perception of commuters regarding the city.
- 3) To find out drivers of mobility to city from the rural-urban fringe.
- 4) To study the impact of E-RGM on community relations and workers' livelihood.

Hypotheses:

The study is based on the following hypotheses -

- 1) Seasonal agricultural unemployment prevails at the source place of commuting workers.
- 2) Amenities, transportation infrastructure, attachment to family and community, better job opportunities are driving forces of daily mobility to the city.
- 3) The E-RGM has negative impact on social relations, mental and physical health of workers while positive impact on economic status.

Study Area:

The study area of the present study is Patna Municipal Corporation and its fringe area. Patna, the capital city of Bihar is situated at the crossroad of 25°36'0" N latitude and 85° 7'0" E longitude. It is the largest city of the state spreading over an area of 109.218 sq. km. For administrative purposes, Patna municipal corporation has been divided into 75 corporation wards which have been arranged into 6 circles namely New capital circle, Patliputra circle, Kankarbagh circle, Bankipur circle, Azimabad circle, Patna City circle. Out of total workers (1,881,886), main workers are 1,371,267 and 510,619 are marginal workers (Patna.nic.in). The sample population is drawn from the commuters residing in the fringe area of Patna and visit daily to the city for the purpose of employment.



Fig. 1

Methodology:

The methodology of the proposed study involves conceptual as well as applied techniques of research. The study is based on primary data collected from field survey. The primary data was collected through interview schedule survey of 90 samples of daily commuters who commute from nearby rural-urban fringe areas to the CBD of Patna. Data were collected during October and November 2021 from purposely selected locations of Patna. Data compilation, tabulation is done and statistical data are represented in cartographic form and mapping has been done using QGIS software.

Results and Discussion:

Spatial mobility is often determined by a region's size, distance, job opportunities, specific personal circumstances, level of education, Socio-cultural

orientation, agricultural developments, industrialization, and government policies (Clay Halton, 2021). However, transportation accessibility is one of the chief determining factors in spatial mobility. The present study on the impact of E-RGM on the livelihood of commuters reveals some notable findings. It was found that a void of job opportunities and very low wages at the source place of commuting workers is filled by the work opportunities available at centre of city Patna. Although E-RGM has a major impact on social relations, mental and physical health, financial status but urban amenities too attract commuters towards the city.



Fig. 2

Place of Origin and Work Destinations of Daily Commuters : Place of origin refers to the location from where commuters commute i.e., fringe area to the central business district (CBD) viz., Patna in the present study (Fig.-2). Commuters commute from distinct area such as Bihta, Danapur, Sampatchak, Parsa Bazar, Neora, Digha, Dhaniawan, Nawada, Didarganj, Maner, Barh, Sabalpur, Fatwa, Gaurichak, Khusrupur, Bakhtiyar, Naubatpur. While the place of destination refers here to the site in the city where people commute. They prefer to commute to places where they can have better wages, daily work, access to markets, and efficient commutation in India, as 39% of daily commuters commute within 0 to 5 km, 31% commute within 5 to 10 km, followed by 10% within 10 to 15 km, and so on (Statista, 2019). This shows that distance is inversely proportional to the number of daily commuters. A similar trend has been observed in mobility from fringe to city Patna as well thus, the concept of distance decay proves to be valid in the case of E-RGM in Patna.



Source: Primary Survey, 2021.

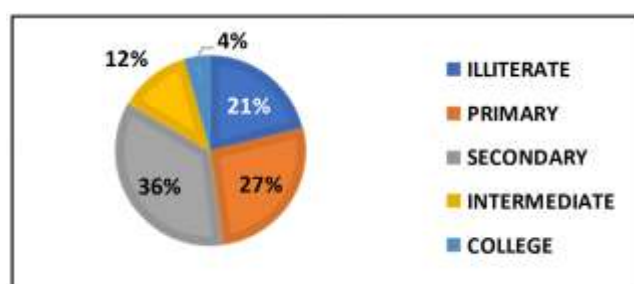
Fig. 3. Place of work destination of daily commuters

Age-Sex Composition:

From the primary survey, it has been observed that the majority of the commuters belong to the age group of 30-40 i.e., 41.1% which is the most productive age group. The study reveals that 66.7% of daily commuters in CBD Patna are male and 33.3% are females.

Educational Qualification:

'Quality Education' and 'Right to Education' are fundamental rights (UNDP, 2015). It is also considered as a basic parameter to analyse the socio-economic condition. Literacy level is considerably low (Fig. 4) among the workers which is the reason for their low income and the lower standard of living.

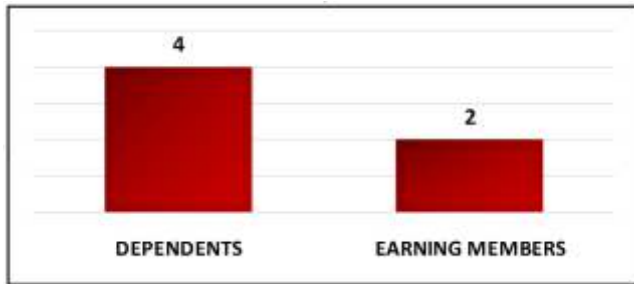


Source: Primary Survey, 2021.

Fig. 4. Educational qualification of daily commuters

Family Status:

Commuters generally have a large family size and they mainly live in joint family but a huge gap could be seen in the average numbers of dependents and earning members in the family. The number of dependents is double the number of earning members who are mainly male members of the family (Fig. 5).



Source: Primary Survey, 2021.

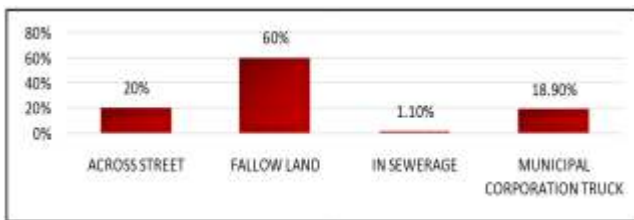
Fig. 5. Average number of dependents and earning members of daily commuters

Living Condition

Water facility is provided under Har Ghar Nal Ka Jal under 7 Nischay of Government of Bihar. It was found that 53.3% of daily commuters are satisfied with the water facility, and 46.7% of them have access to 22-24 hours of electricity. The majority of them have private toilet facilities still 28.9% of the respondents use the public toilet.

Housing facility

Housing is the next civic amenity that is essentially a basic need. Safe, secure, habitable, and affordable housing is enshrined in international human rights and that is why it is also one of the sustainable development goals set by the United Nation.



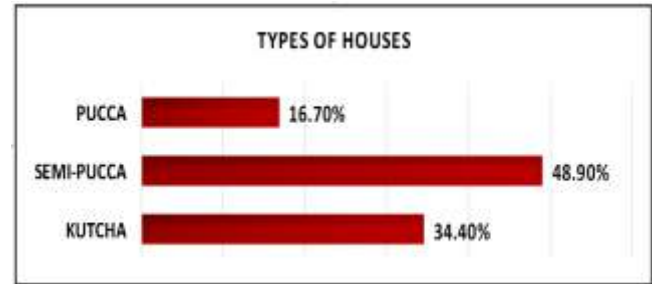
Source: Primary Survey, 2021.

Fig. 7. Garbage Dumping at the place of residence

Table 1. Intake of food and beverages by daily commuters (weekly)

	Meat		Milk for drinking		Milk for tea and dessert	
	Frequency	%	Frequency	%	Frequency	%
Once	28	31.1	29	32.2	2	2.2
Twice	18	20	17	18.8	8	8.9
More than twice	5	5.6	21	23.3	33	36.7
Occasionally	39	43.3	19	21.1	19	21.1
Everyday	0	0	4	4.4	28	31.1
Total	90	100	90	100	90	100

Source: Primary Survey, 2021.



Source: Primary Survey, 2021.

Fig. 6. Types of House

From the above Fig. 6, the dominance of semi-pucca houses can be seen, a smaller number of houses are completely pucca i.e., 16.7% which is followed by 34.4% of houses as Kutcha. This shows the level of economic prosperity also within the population of the urban fringe area of Patna. In fringe areas, the condition of roads is satisfactory, with 27% of commuters reported that they have good condition roads.

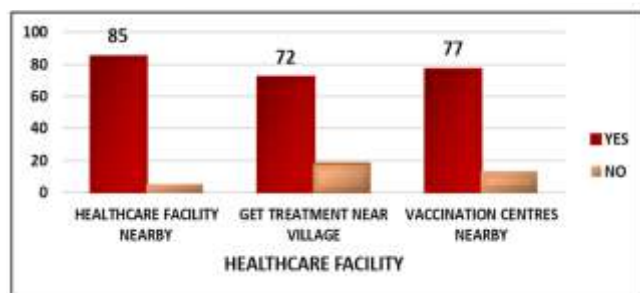
Garbage disposal

Solid waste management is the biggest challenge with the increasing population. Improper dumping of garbage becomes an issue of concern as the majority of respondents throw them either in fellow land (60%) or on the street (20%) while 18.90% of the respondents get facility of garbage collection (Fig.7).

Food consumption

The next important social aspect that is important is the availability of proper nutrition to daily commuters. Daily nutrition consists of certain basic diet which has taken daily by most of the people known as staple food.

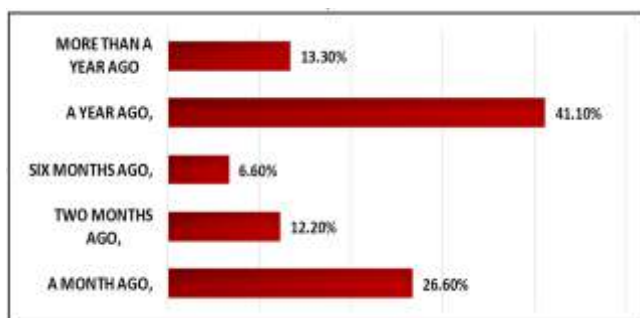
The above Table 1, provides a glance at the health aspect of daily commuters and respondents are more or less satisfied by the food they eat.



Source: Primary Survey, 2021.

Fig. 8. Healthcare facilities in the fringe area

From the above graph (Fig. 8), it is assessed that (a) 85% of daily commuters are having nearby health care facilities, (b) 72% of daily commuters get treatment from nearby villages, and (c) 77% of commuters are having nearby vaccination centres. All these data show good availability of health in fringes area. Commuters prefer government hospital (54.40%) for treatment and 18.90% goes to private hospital only during critical health issues mainly due to low income and less savings.



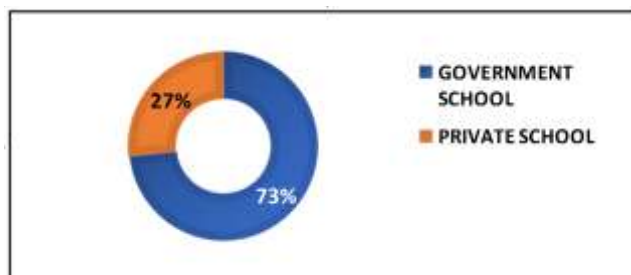
Source: Primary Survey, 2021.

Fig. 9. Time span of last visit to the city for health treatment

From the above graph (Fig. 9), it is assessed that 41.10% of commuters have visited the city for treatment purposes, 13.30% more than a year ago, followed by 6.60% six months ago and 26.60% a month ago. The data shows that the dependency level is very low on the main city for seeking day to day health related issues but during critical health conditions city becomes first preference of the commuters.

Educational facility

Literacy level depends on the availability and condition of education facilities present nearby. The graph below (Fig. 10) shows that 73% of commuters send their children to government school while 27% in small private schools near-source community. It reveals the fact that government schools remain the backbone for providing education and its development and proper monitoring would improve the quality of education among lower-income groups of the society. However, 97% of the respondents agreed that the city Patna is a better place for children's education as compared to the fringe area.



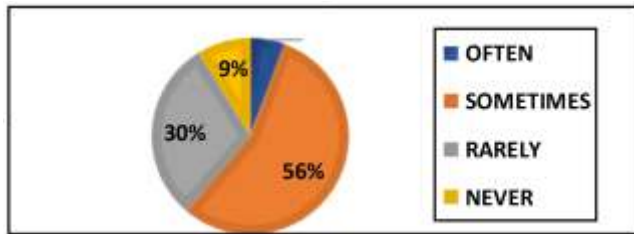
Source: Primary Survey, 2021.

Fig. 10 - Availability of school in fringe areas

Recreational or leisure Activity

Daily mobility is not aloof of stress and frustrations thus need for mind refreshment becomes important.

The recreational activities of different kinds like visiting fairs, watching movies, parks, temples, zoo, watching T.V., listening music, playing games, walking in open space, etc. is affected because of E-RGM as that majority (56%) of commuters spend little time for leisure and recreational activities while 30% rarely spend for these purposes, 5% very often and 9% never get time for such activities and spend their whole day in working and traveling to and from the city. 59% of the respondents didn't have facilities of recreation nearby place of residence which arises questions on social justice and quality of life (Fig. 11).

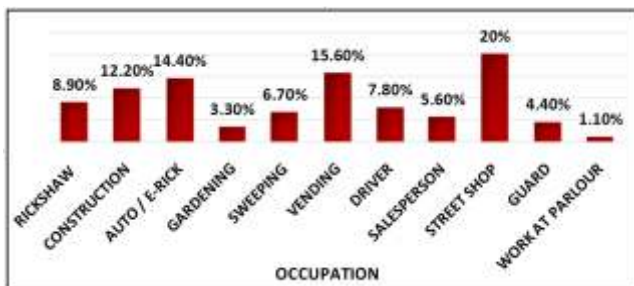


Source: Primary Survey, 2021.

Fig. 11. Impact on recreational activities

Occupational Structure

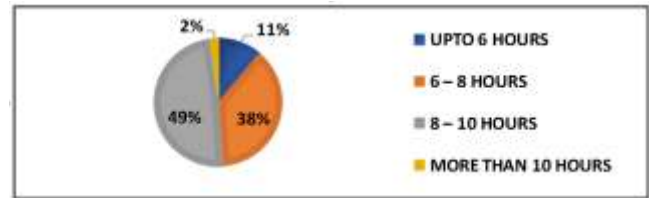
The occupation of any individual depends on factors such as level of education, skill, available opportunities, etc. In the case of daily commuters' majority of the commuters are either semi-skilled or skilled but have temporary daily wage works (Fig. 12), 20% of daily commuters work on the street shop, 15.60% of commuters are vendors, 14.40% of commuters are working as a driver of auto or e-rickshaws, 12.20% are engaged in construction, 8.90% are working as a rickshaw puller, they provide service like salesperson, driver, guard, sweeping, gardening, parlour worker, etc. to city people which reflects lack of skill and skill based works by the daily commuters in city Patna. Thus, E-RGM has positive impact on economic status of the population.



Source: Primary Survey, 2021.

Fig.12. Occupational fields of daily commuters

Most of the commuters earn between 5000-10,000 which is very low income which affects their purchasing power and because of the high number of dependents expenditure is also very high resulting in lower savings. Despite more working hours (Fig. 13), the majority of the workers had some kind of loan from money lenders as well which makes them vulnerable during economic hardships like during COVID-19 lockdown.

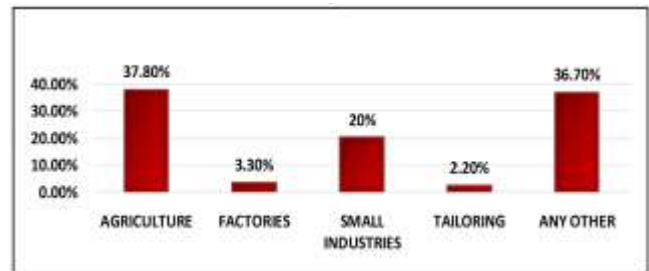


Source: Primary Survey, 2021.

Fig. 13. Average working hours of commuters

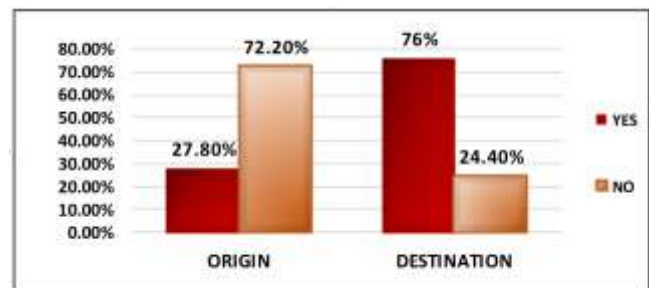
Type of work available at the Place of Origin

The given Fig. 14, reflects that 37.80% of daily commuters get seasonal agricultural work at the place of origin, 36.70% get freight work, cleaning jobs, etc. whereas, 23.3% get work in small industries and factories, and 2.20% are engaged in sewing and tailoring. Thus, validate the first hypothesis that there is seasonal agricultural unemployment prevailing at the place of origin of commuting workers.



Source: Primary Survey, 2021.

Fig. 14 - Type of work available at the Place of Origin



Source: Primary Survey, 2021.

Fig.15. Status of work availability

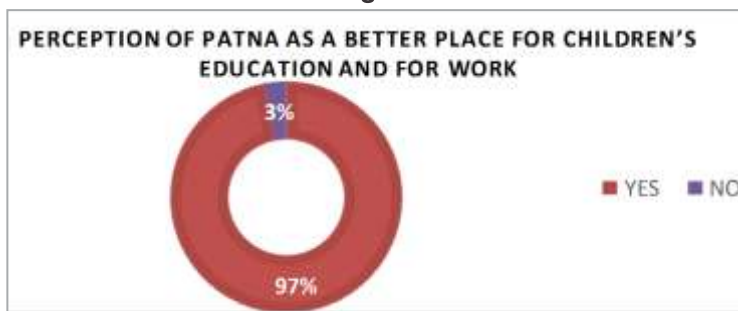
Commuters spend considerable time in traveling to and fro. Thus, they have less time to spend with their community, family, friend and minimal time to spend on leisure activities. As they didn't get work throughout the year at the place of origin, are forced to commute to the

city. However, 24 % of the respondents don't get work throughout the year in the city too (Fig. 15).

Perception Regarding City: From the figure given below (Fig.-16) it is observed that 97% of commuters agreed that Patna is a better place for children's education

and they would like to shift if their financial condition allows in future and also perceived city as a 'bread-giver' to the daily commuters as it provides them better and regular employment opportunities.

Fig. 16



Source: Primary Survey, 2021.

Drivers of Mobility

Drivers of mobility refer to the various attracting forces at city Patna that influence a worker's decision to move from the fringe areas. The drivers of mobility have been analysed through various factors influencing workers' decision to stay in their source communities and commute to Patna. The data shows 79% of daily commuters stay in their source communities and commute to CBD Patna mainly due to better wages and daily work availability.

Table 2. Influencing factors in daily mobility to the city

Factors	Most likely	Likely	Neutral	Least likely
Family	6	7	18	14
Friends	9	3	11	19
Get work everyday	11	15	17	13
Amenities provided by CBD	6	10	24	22
Better income / wage	35	26	11	14
Better job opportunities	23	29	9	8

Table 3. Positive impact of living with family in the fringe area

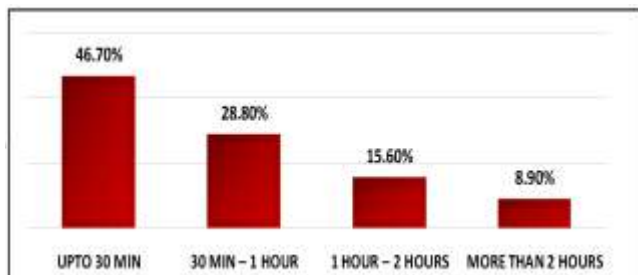
	Most likely	Likely	Neutral	Least likely
Can save more	32	15	14	16
Less burden on expenses	11	11	18	24
Can get home made food	18	21	16	15
Better health conditions	19	17	23	13
Visit family daily	10	26	19	22
Total	90	90	90	90

Source: Primary Survey, 2021.

The above data (Table 2, Table 3) reflects that there are multiple positive impacts of living with family in fringes area as they can save more, get homemade food for better health, and visit family on daily basis as a recreational activity. 82% of the workers wished to shift in CBD of Patna, it would reduce travel expense for when they can't find work and have to return home without earning and because of physical and mental exhaustion.

Impact on Physical and Mental Health:

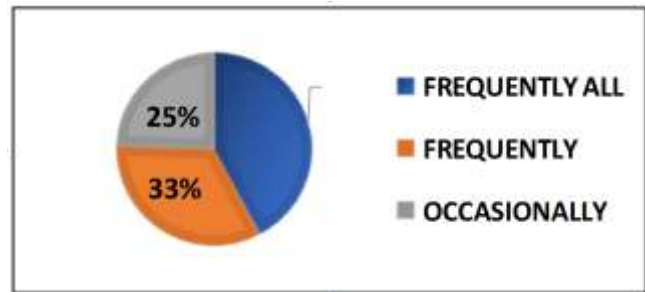
Daily commuting from fringe area to CBD create a lot of stress on workers' body and mind. It is observed that no major physical health issue is faced by commuters but headaches and anxiousness is felt by almost all of the daily commuters. Mental health is a serious issue and that is why steps like Mental Health Care Act -2017 and National Mental Health Programme (NMHP) must be taken seriously.



Source: Primary Survey, 2021.

Fig.17. Time spent with your families and friends

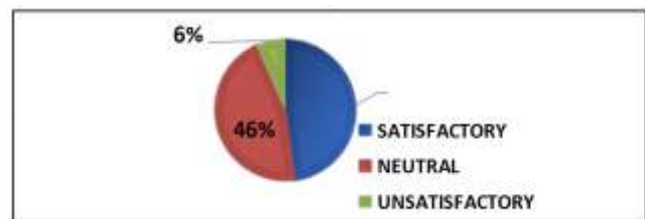
Here the impact of E-RGM on daily commuters has been analysed through familial and social relations i.e., time spent by commuters with his family and friends, time spent during festive seasons, time spent on leisure and entertainment activities, and sense of belongingness to a place of origin and place of destination. It is found that just 8.9% spend more than two hours, 15.6% spend one to two hours with families and friends, 28.80% spend 30 minutes to one hour, majority i.e. 46.7% of commuters spend up-to 30 minutes (Fig.17). This shows that commuters are not getting enough time to maintain their healthy social and mental status which reflects negative impact of E-RGM on health.



Source: Primary Survey, 2021.

Fig.18. Participation in Community Activities

The above chart (Fig.18) reveals that 42% of daily commuters spend time frequently in all the festivals and community activities, 33% participate frequently while 25% occasionally participate in community activities due to more number of working hours and time consumed in travelling to city.



Source: Primary Survey, 2021.

Fig. 19. Satisfaction with life

It is found that 72% of daily commuters feel stress and sleep disorder, frustration. These hardships put variation in the level of satisfaction with life which implies to 'sense of happiness' and 'fulfillment' or 'contented' within any individual and despite hardships of life and daily mobility which affects their physical and mental condition 48% of daily commuters are still satisfied with their life (Fig. 19). They hold a strong 'sense of belongingness' to their place of origin and perceive city as a 'Bread giver' to their family.

Conclusion and Suggestions:

Employment - Related Geographical Mobility (E-RGM) is a significant phenomenon for the survival of many lives as well as the economy, however, its multi-dimensionality attracts the geographers of all economies (Cresswell et al.2016; Roseman et al.2015). This phenomenon of people's mobility from fringe areas to a city is a recent phenomenon which is

generating a relationship between the fringe and city centre. The daily commuters act as a service provider to the city and leads to development of the city.

The study on the impact of employment-related geographical mobility (E-RGM) on the livelihood of daily commuters from rural-urban fringe to CBD of Patna reveals that the majority of the daily commuters belong to the most productive age group of 30-40 and earn on an average of 10,000 a month, which is quite low after so much of effort of traveling on daily basis for the purpose of work. Due to daily mobility spending time at festivals with family or friends is more like social responsibility. They often feel anxious and have health issues like headaches, backaches, and weakness due to daily travel. To ease their mental stress they had adopted unhealthy practices such as consuming *Paan*, *Ghutka*, *Bidi* and alcohol at large. Recent alcohol ban has definite positive impact on financial status of the commuters. However, illegal and toxic liquor consumption puts extra burden on finance and effects health as well. As it has been found that 79% of commuters choose to move for work to Patna due to economic benefits so, it could be deciphered that the chief driver of daily mobility is better income at CBD of Patna.

Seasonal agricultural unemployment, lack of industries and formal sectors for employment as well as lack of skill and education among the commuters creates hardships in life. Though the commuters are satisfied with their life despite several hardships for earning a livelihood but quality of life is not upto the mark. The impact of E-RGM on the income of the workers is not satisfactory as it adds up very little in

improving their quality of life. For improving the condition of these daily commuters government and community needs to take robust actions in creating job opportunities at the source place by generating agricultural employment, under several government schemes such as MNGREGA, Make in India, and by establishing MSME enterprises along with skill enhancement programmes because the remittances are just maintaining two-time meal of their family and barely improving their living conditions.

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